**INDOOR AIR QUALITY LAB**

Indoor Contaminants

People spend 90% of their time indoors where air quality is commonly 2 to 5 times more contaminated with Volatile Organic pollutants (VOC’s) and particle air pollutants - such as dust. For some, indoor air contaminants contribute and/or trigger Asthma. Common Asthma triggers include: **dust, chemical based cleaners, aerosols, cold air, pests and second hand smoke.**

Ventilation

Open windows to exchange stale, indoor air with fresh air. If possible, open the bottom and top windows to encourage a circular air flow (remember, hot air rises). Air Conditioners are heat exchangers – not air exchangers. They simply cool the existing warm air and return it to the room.

Best Air Purifying Plants (Phytoremediation)

All trees and plants convert Carbon Dioxide to Oxygen. Trees and plants are vital to purifying the air, this is why we must be very careful to reforest any trees and vegetation we remove.

Some plants have been shown to remove up to 75% of indoor pollution.

* **Plants manufacture fresh oxygen and remove carbon dioxide**
* **They reduce airborne chemicals and VOCs**
* **They cultivate healthy levels of humidity**
* **They enhance indoor environment**

A recent NASA study concluded that **some plants are better than others** in filtering **certain airborne chemicals**:

* English ivy, gerbera daisies, pot mums, peace lily, bamboo palm, and Mother-in-law's Tongue were found to be the best plants for treating air contaminated with **Benzene** – a common chemical off-gas from Tobacco smoke, inks, plastics, detergents and oil/gasoline.
* The peace lily, gerbera daisy, and bamboo palm were very effective in treating **Trichloroethylene** - a common airborne contaminant from inks, paints and adhesives.
* Pot mums, bamboo palm, Philodendron, spider plant are good choices for filtering **Formaldehyde** – a common off-gas of carpet, chemical based household cleaners, plywood furniture and paper goods.

*\* Remember that plants need to breathe, too.  Dust them gently with a damp cloth, moisten the cloth with milk to add some extra shine.  Keep their soil or root area clear - some of the air-cleaning action occurs there.*

**Top 15 Air Purifyers:**

1. Philodendron scandens `oxycardium', heartleaf philodendron

2. Philodendron domesticum, elephant ear philodendron

3. Dracaena fragrans `Massangeana', cornstalk dracaena

4. Hedera helix, English ivy

5. Chlorophytum comosum, spider plant

6. Dracaena deremensis `Janet Craig', Janet Craig dracaena

7. Dracaena deremensis `Warneckii', Warneck dracaena

8. Ficus benjamina, weeping fig

9. Epipiremnum aureum, golden pothos

10. Spathiphyllum `Mauna Loa', peace lily

11. Philodendron selloum, selloum philodendron

12. Aglaonema modestum, Chinese evergreen

13. Chamaedorea sefritzii, bamboo or reed palm

14. Sansevieria trifasciata, snake plant

15. Dracaena marginata , red-edged dracaena

*\*For every 500 sq. ft., 3 to 4 of these common houseplants help to improve air quality. They also recommend that the plants be grown in six inch containers or larger.*

DIY Green Cleaners

Keeping your indoor environment clean is essential for good health. It is important NOT to contribute to indoor pollution by using chemical based cleaning products. Look for BIODEGRADABLE or PLANT- BASED, NON-TOXIC cleaning products. You can also make your own!

**All-Purpose Basic Soda Spray** (yield 1 pt.)

½ teaspoon baking soda

½ teaspoon castile soap

½ teaspoon total rosemary and sweet orange essential oils (or oils of your choice)

1 cup very warm water *(mix all above well)*

1 cup club soda *(add last and gently swirl as to not create excess pressure)*

**Glass Spray** (yield 1 qt.)

¼ cup distilled White Vinegar

½ teaspoon biodegradable dish soap or castile

1 ¾ cups water

8 drops essential oils (of your choice)

\*You may encounter streaks when switching from Ammonia-based products. You may need to reapply the ammonia-free cleaner two to three times to break through the residue. You’ll only have to do this once however. Also, use newspaper on glass! Newspaper is lint free and saves on the use of paper towels. You can still recycle it when you’re finished!

**All-Purpose Citrus Spray** (yield 1 pt.)

½ cup white distilled vinegar

1 Tablespoon Citra-Solv Cleaner & Degreaser concentrate

1 ½ cups warm water

½ teaspoon total antiseptic essential oils

½ teaspoon biodegradable liquid dish soap or castile soap

\*A number of essential oils will naturally boost the antiseptic abilities of a homemade cleaner. Start with two or three, then mix and match to your desire. Cinnamon, clove, lavender, lemon, lemongrass, lime, oregano, rosemary, sweet orange, tea tree and thyme are all wonderful options.